



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,086	08/19/2003	Arkady Glukhovsky	P-2388-US1	3064
49443	7590	04/13/2006		
PEARL COHEN ZEDEK, LLP 1500 BROADWAY 12TH FLOOR NEW YORK, NY 10036			EXAMINER JAGAN, MIRELLYS	
			ART UNIT 2859	PAPER NUMBER

DATE MAILED: 04/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/643,086		GLUKHOVSKY ET AL.	
	Examiner		Art Unit	
	Mirellys Jagan		2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6-8,11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-8,11 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/6/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,641,529 to Kuranishi in view of U.S. Patent 6,148,152 to Cazier et al [hereinafter Cazier] and WO9930610A1 to Gavriel et al [hereinafter Gavriel].

Kuranishi discloses a method for calculating a temperature change in an environment, the method comprising introducing in-vivo an image sensor having an image sensing module (CCD 31) at the tip of fiber scope (30), which also includes a lens. A sampled dark current of the image sensor introduced in-vivo is known to vary in dependence upon the temperature of the body into which the image sensor has been introduced; sensing the dark current noise (Figs. 2-3, e.g., sampled at time t27, stored in memory 11A) of the image sensing module; obtaining a dark current data sample (and storing in memory 11, e.g., sampled at time t27, stored in memory 11A).

Kuranishi does not disclose comparing a dark current data sample of the sensed dark current noise to a previous sample; calculating the temperature change in vivo according to the comparison; and containing the image sensor in a capsule.

Cazier discloses that is known in the art of digital imagers (or imaging cameras) to use the sampled dark current of the imager (e.g., CCD photosensors in a digital camera) for calculating temperature of the camera focal plane, and further discloses comparing a dark current data sample (I_c) of the sensed dark current noise to a previous sample (I_B) and a step of calculating the temperature change according to the comparison. Cazier discloses that determining temperature of the camera is advantageous for enabling thermal compensation of the lens system of the imager.

Gavriel discloses a video imager for detecting patient information, wherein the imaging system is in a capsule for detecting the patient's information in-vivo (see abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the dark current noise provided in the image sensor introduced in-vivo of Kuranishi for determining a temperature change by sampling a dark current data sample of the sensed dark current noise and comparing the sample to a previous sample in order to optimize the focus by thermal compensation of the lens system of the image sensor as taught by Cazier.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Kuranishi by containing the image sensor in a capsule, as taught by Gavriel, in order to detecting the patient's temperature in-vivo.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuranishi, Cazier, and Gavriel, as applied to claim 1 above, and further in view of Japanese Patent 57-45833 to Nakagawa.

Art Unit: 2859

Kuranishi, Cazier, and Gavriel disclose a system having all of the limitations of claim 6, as stated above in paragraph 2, except for the temperature being displayed.

Nakagawa discloses an in-vivo measuring system wherein the measurements are displayed for viewing by a user.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Kuranishi, Cazier, and Gavriel by displaying the measurements taken in-vivo, as taught by Nakagawa, in order to see the temperature measurements that are taken in the body.

4. Claims 2, 7, 8, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuranishi in view of Cazier and Gavriel.

Kuranishi discloses a system for calculating a temperature change in vivo, the system comprising:

an image sensor 31,

an integrating unit 22.,

wherein the integrating unit amplifies the dark current noise it samples from the image sensor; the integrating unit includes both inputs and outputs so that information is passed through it to communicate; the image sensor and said integrating unit are controlled according to an illuminating condition, e.g., Fig.2; shows "ordinary light is extinguished during the dark-current data storage periods, while no light is illuminating the internal tissue; the image sensor senses the dark current noise during a dark period; and the image sensor communicates with said controller during periods when said image sensor is not illuminated (figure 2, shows ordinary light is

Art Unit: 2859

extinguished during the 'dark-current' data storage periods) (see figure 3; column 5, line 46-column 6, line 8).

Kuranishi does not explicitly disclose that the system includes a change detector, including the functional limitations of detecting changes between said dark current noise samples and calculating the temperature change in in-vivo according to the changes, and the system being in a capsule.

Cazier discloses a system for calculating a temperature change in an imaging camera by detecting changes in the sampled dark current of the imager (e.g., CCD photosensors in a digital camera) for calculating temperature of the camera focal plane (Column 2, lines 25-60) and further discloses comparing a dark current data sample (I_c) of the sensed dark current noise to a previous sample (I_b) and a step of calculating the temperature change according to the comparison. Cazier discloses that calculating temperature of the camera is advantageous for enabling thermal compensation of the lens system of the imager.

Gavriel discloses a video imager for detecting patient information, wherein the imaging system is in a capsule for detecting the patient's information in-vivo (see abstract).

Referring to claim 2, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the dark current noise provided in the image sensor introduced in-vivo of Kuranishi by adding a change detector, as suggested by Cazier for calculating the temperature change by sampling the dark current noise and comparing the samples in order to determine the temperature change of the image according to the changes of the dark current noise of the sensor introduced in-vivo.

Art Unit: 2859

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Kuranishi by containing the image sensor in a capsule, as taught by Gavriel, in order to detecting the patient's temperature in-vivo.

Response to Arguments

5. Applicant's arguments with respect to claims 1, 2, 6-8, 11, and 12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2859

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mirellys Jagan whose telephone number is 571-272-2247. The examiner can normally be reached on Monday-Friday from 11AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJ
March 30, 2006



Diego Gutierrez
Supervisory Patent Examiner
Technology Center 2800